COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

Permit No.: VPA01423
Effective Date: October 22, 2003
Expiration Date: October 21, 2013

AUTHORIZATION TO MANAGE POLLUTANTS UNDER THE
VIRGINIA POLLUTION ABATEMENT PERMIT
AND
THE VIRGINIA STATE WATER CONTROL LAW

In compliance with the provisions of the State Water Control Law and the Board's Permit Regulation adopted pursuant thereto, the following owner is authorized to manage pollutants in conformity with the application, plans, specifications and supporting data submitted to the Department of Environmental Quality and other conditions set forth in this permit.

Owner:	Westmoreland County
Owner Address:	P.O. Box 1000 Montross, Va. 22520
Facility Name:	Coles Point Wastewater Treatment Plant

The authorized pollutant management shall be in accordance with this cover page, Part I - Monitoring Requirements and Special Conditions and Part II - Conditions Applicable to All VPA Permits, as set forth herein.

James J. Golden (for)
Director, Department of Environmental Quality

10-22-03
Date

A. WASTEWATER LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning with the permit's effective date and lasting until the permit's expiration date, the permittee is authorized to manage pollutants at the Coles Point Wastewater Treatment Plant, waste treatment and storage facilities and the land application sites listed in Attachment A.

The pollutants shall be limited and monitored by the permittee as specified below:

WASTEWATER INFLUENT TO STORAGE POND				
PARAMETERS	LIMITATIONS	UNITS	MONITORING REQUIREMENTS	
			Frequency	Sample Type
Influent Flow (Avg)	NL*	MGD	Continuous	T/I/R
Influent Volume (Total)	NL	MG	Continuous	T/I/R
Volume in Storage[e]	NL	MG	1/Day	Calculated
Remaining Storage Capacity[e]	NL	MG	1/Day	Calculated
pH[d]	NL	S.U.	1/Month	Grab
TSS	60 mg/l	mg/L	1/Month	8HC
BOD_5	60 mg/l	mg/L	1/Month	8HC

* NL = No Limitation, monitoring required
T/I/R = Totalizing, Indicating, and Recording Equipment
8 HC = 8 Hour Composite

a. The design flow of the wastewater treatment facility (located on the west side of Rt. 612) is 150,000 gpd, and the overall design flow of the land treatment system is as specified in the approved and current effective Nutrient Management Plan.

b. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location: following wastewater treatment, before discharge to storage.

c. The physical location and procedures for storage influent monitoring shall be described in the Operations and Maintenance Manual.

d. Except for pH monitoring, which is to be reported as a range, the permittee shall report the monthly average and daily maximum of BOD_5 andTSS.

e. Refer to Part I.B.22.

f. All monitoring/test results shall be reported on a monthly basis to the Department of Environmental Quality's Piedmont Regional Office (DEQ-PRO) by the tenth of the month following the reporting period.

A. WASTEWATER MONITORING REQUIREMENTS

2. During the period beginning with the permit's effective date and lasting until the permit's expiration date, the permittee is authorized to manage pollutants at the waste treatment and storage facilities and the land application sites listed in Attachment A.

The pollutants shall be limited and monitored by the permittee as specified below:

WASTEWATER FROM STORAGE POND TO SPRAY FIELDS				
PARAMETERS	LIMITATIONS	UNITS	MONITORING REQUIREMENTS	
			Frequency	Sample Type
Total Volume[c]	NL	MG	Continuous	T/I/R
Total Volume to Each Site[c]	NL	MG	Continuous	Calculated
pH[d]	6.0-9.0	S.U.	1/Day	Grab
Total Residual Chlorine[d,e]	>1.5	mg/L	1/Day	Grab
Total Phosphorus	NL	mg/L	1/Month	Grab
Total Potassium	NL	mg/L	1/Month	Grab
Alkalinity	NL	mg/l	1/Month	Grab
TKN	NL	mg/L	1/Month	Grab
Ammonia-Nitrogen	NL	mg/L	1/Month	Grab
Nitrate-Nitrogen	NL	mg/L	1/Month	Grab
Total Sodium	NL	mg/L	1/Month	Grab
Total Chloride	NL	mg/l	1/Month	Grab
Total Recoverable Boron[f]	NL	mg/l	2/Year	Grab
Total Recoverable Copper[f]	NL	µg/L	1/5 Years	Grab
Total Recoverable Zinc[f]	NL	µg/L	1/5 Years	Grab
Total Recoverable Nickel[f]	NL	µg/L	1/5 Years	Grab
Total Recoverable Cadmium[f]	NL	µg/L	1/5Years	Grab
Total Recoverable Lead[f]	NL	µg/L	1/5 Years	Grab
Storage Tank Freeboard	2.0 ft. min.	ft.	1/Day	Measure

A. WASTEWATER MONITORING REQUIREMENTS (continued)

NL = No limit. This is a monitoring requirement only.

a. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location: following the storage pond, prior to spray irrigation to the land application sites listed in Attachment A. The storage tank freeboard shall be measured in the two storage tanks which hold the effluent to be sprayed.

b. The physical location of, and procedures to be used for monitoring the wastewater applied to the land application sites shall be described in the Operations and Maintenance Manual.

c. Refer to Part I.B. and the approved NMP for additional limitations on wastewater application.

d. The pH and total residual chlorine monitoring are to be reported as a range. In the event more than one sample is taken for any other parameters, they shall be reported as a monthly average and a daily maximum.

e. (1) No more than 3 of all total chlorine residual analyses shall be outside the range of 1.5 to 2.5 mg/l for any one calendar month.
(2) Any 2 consecutive test results not within the range of 1.0 to 4.0 mg/l shall be immediately reported in accordance with paragraph F(2) of Part II.
(3) No single TRC analysis shall exceed 4.0 mg/l at any time.

f. Sampling to be initiated at a frequency of 1/5 Years shall begin within 90 days from the date of permit issuance and continue at a frequency of every 5 years from the effective date of the permit. Samples to be taken in compliance with the 2/Year requirement shall be taken in April and October of each year.

g. All metals data is to be reported as the Total Recoverable form. Additional samples may be required after a review of monitoring results.

h. All monitoring/test results shall be reported on a monthly basis to the Department of Environmental Quality's Piedmont Regional Office (DEQ-PRO) by the tenth of the month following the reporting period.

A. WASTEWATER MONITORING REQUIREMENTS

3. During the period beginning with the permit's effective date and lasting until the permit's expiration date, the permittee is authorized to manage pollutants at the waste treatment and storage facilities and the land application sites listed in Attachment A.

The pollutants shall be limited and monitored by the permittee as specified below:

LAND APPLICATION MONITORING				
PARAMETERS	LIMITATIONS	UNITS	MONITORING REQUIREMENTS	
			Frequency	Sample Type
Maximum Hydraulic Loading	**	in/hr, in/day, in/wk, in/year	Continuous	Calculated
Plant Available Nitrogen (PAN) [b]	See Part I.B.23	lbs/acre	1/Month	Calculated
Phosphorus as P_2O_5 [b]	NL	lbs/acre	1/Month	Calculated
Potassium as K_2O [b]	NL	lbs/acre	1/Month	Calculated

NL = No limit. This is a monitoring requirement only.
** Refer to approved NMP

a. Samples taken in compliance with the monitoring requirements specified above shall be calculated for the irrigation sites listed in Attachment A in accordance with the monitoring required by Part.I.B. of this permit and the NMP.

b. Appropriate records shall be maintained by the owner for each site regarding nitrogen, phosphorus and potassium requirements for manure, chemical fertilizers and land applied wastewater/effluent. Total loading rates for nitrogen shall not exceed the requirements specified in the NMP.

c. All monitoring/test results shall be reported on a monthly basis to the Department of Environmental Quality's Piedmont Regional Office by the tenth of the month following the reporting period.

A. SOIL MONITORING REQUIREMENTS

4. During the period beginning with the permit's effective date and lasting until the permit's expiration date, the permittee is authorized to manage pollutants at the Coles Point waste treatment and storage facilities and the land application sites listed in Attachment A.

The pollutants shall be limited and monitored by the permittee as specified below:

SOIL MONITORING				
PARAMETERS	LIMITATIONS	UNITS	MONITORING REQUIREMENTS	
			Frequency*	Sample Type**
Soil pH	NL	S.U.	1/Year	Composite
Soil Organic Matter	NL	%	1/Year	Composite
Cation Exchange Capacity	NL	meq/100g	1/Year	Composite
Total Nitrogen	NL	ppm	1/Year	Composite
Organic Nitrogen	NL	ppm	1/Year	Calculated
Ammonia Nitrogen	NL	ppm	1/Year	Composite
Available Phosphorus	NL	ppm	1/Year	Composite
Exchangeable Potassium	NL	ppm	1/Year	Composite
Exchangeable Sodium	NL	ppm	1/Year	Composite
Exchangeable Magnesium	NL	ppm	1/Year	Composite
Exchangeable Calcium	NL	ppm	1/Year	Composite
Hydraulic Conductivity	NL	in/hr	1/Year	(a, b)
Particle Size Analysis or USDA Textural Classification	NL	%	1/5 Year	Composite
Total Recoverable Copper	NL	ppm	1/5 Year	Composite
Total Recoverable Nickel	NL	ppm	1/ 5Year	Composite
Total Recoverable Zinc	NL	ppm	1/5 Year	Composite
Total Recoverable Manganese	NL	ppm	1/5 Year	Composite
Total Recoverable Chromium	NL	ppm	1/5 Year	Composite
Total Recoverable Cadmium	NL	ppm	1/ 5 Year	Composite
Total Recoverable Lead	NL	ppm	1/5 Year	Composite

A. SOIL MONITORING REQUIREMENTS (continued)

NL = No Limit. This is a monitoring requirement only.

* Soils samples are to be collected as specified in the approved Nutrient Management Plan.

** Soil composite samples shall be representative of each soil type delineated by the SCS Soil Survey (or the equivalent).

a. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following locations: land application fields 1A, 1B, 2A, 2B, 3A, and 3[redacted] listed in Attachment A. In addition, samples shall also be taken at the reserve area if it is in use.

b. Sampling for Hydraulic Conductivity shall be initiated at the most restrictive subsoil layer.

c. Soil sampling shall be performed in April for the 1/Year samples and reported to the DEQ-PRO by July 10th each year. Sampling to be initiated at a frequency of 1/5 Years shall begin within 90 days from the date of permit issuance and continue at a frequency of every 5 years from the effective date of the permit.

A. GROUND WATER MONITORING REQUIREMENTS

5 During the period beginning with the permit's effective date and lasting until the permit's expiration date, the permittee is authorized to manage pollutants at the Coles Point waste treatment and storage facilities and the land application sites listed in Attachment A.

The pollutants shall be limited and monitored by the permittee as specified below:

GROUND WATER MONITORING				
PARAMETERS	LIMITATIONS	UNITS	MONITORING REQUIREMENTS	
			Frequency	Sample Type
Static Water Level[b]	NL	0.1 ft	1/Quarter	Measured
pH	NL	S.U.	1/Quarter	Grab
Sodium	NL	mg/L	1/Quarter	Grab
Conductivity	NL	mmhos/cm	1/Quarter	Grab
Chloride	NL	mg/L	1/Quarter	Grab
COD	NL	mg/L	1/Quarter	Grab
Coliform, Fecal	NL	N/100 mL	1/Quarter	Grab
Total Kjeldahl Nitrogen (TKN)	NL	mg/L	1/Quarter	Grab
Ammonia-Nitrogen	NL	mg/L	1/Quarter	Grab
Nitrate-Nitrogen	NL	mg/L	1/Quarter	Grab
Fluoride	NL	mg/L	1/Year	Grab
Hardness as $CaCO_3$	NL	mg/L	1/Year	Grab
Alkalinity	NL	mg/L	1/Year	Grab
Phosphorus, Total	NL	mg/L	1/Year	Grab
Total Recoverable Manganese	NL	mg/l	1/Year	Grab
Total Recoverable Boron	NL	mg/L	1/Year	Grab
Total Recoverable Copper	NL	µg/L	1/Year	Grab
Total Recoverable Chromium	NL	µg/L	1/Year	Grab
Total Recoverable Cadmium	NL	µg/L	1/Year	Grab
Total Recoverable Nickel	NL	µg/L	1/Year	Grab
Total Recoverable Lead	NL	µg/L	1/Year	Grab
Total Recoverable Zinc	NL	µg/L	1/Year	Grab

A. GROUND WATER MONITORING REQUIREMENTS (continued)

NL = No Limit. This is a monitoring requirement only.

a. The permittee shall establish the background water quality for all the above monthly and once per 5 year parameters for MW-1, MW-2, MW-3, MW-4, MW-5, and MW-6 in accordance with the approved Groundwater Monitoring Plan. The background water quality is to be established by collecting one set of all the above quarterly and once per year parameters each month until six (6) sets have been obtained. Once the six (6) sets of each of the parameters have been collected, the sampling schedule shall revert to the quarterly and annual testing as described in Part I. A. above.

b. The static water level shall be measured prior to bailing well for sampling.

c. After the establishment of background water quality, quarterly samples shall be collected during the months of March, June, September and December, at MW-1, MW-2, MW-3, MW-4, MW-5, and MW-6 at the monitoring locations specified in Attachment B and reported to the Department of Environmental Quality - PRO. Once per year samples shall be taken during the month of September for reporting by October 10.

d. All test results shall be reported to the Department of Environmental Quality – PRO by the tenth of the following month.

e. Detection levels shall be less than or equal to the current State Water Control Board Groundwater Standards.

f. At least 3 well volumes of groundwater shall be withdrawn immediately prior to sampling each monitoring well.

A. Surfacewater Monitoring

6. During the period beginning with the permit's effective date and lasting until the permit's expiration date, the permittee is authorized to manage pollutants at the Coles Point waste treatment and storage facilities and the land application sites listed in Attachment A.

   The pollutants shall be limited and monitored by the permittee as specified below:

SURFACEWATER MONITORING				
PARAMETERS	LIMITATIONS	UNITS	MONITORING REQUIREMENTS	
			Frequency	Sample Type
pH	NL	S.U.	1/Quarter	Grab
BOD_5	NL	mg/l	1/Quarter	Grab
Total Phosphorus	NL	mg/l	1/Quarter	Grab
Chloride	NL	mg/L	1/Quarter	Grab
Conductivity	NL	mmhos/cm	1/Quarter	Grab
Total Kjeldahl Nitrogen (TKN)	NL	mg/L	1/Quarter	Grab
Ammonia-Nitrogen	NL	mg/L	1/Quarter	Grab
Nitrate-Nitrogen	NL	mg/L	1/Quarter	Grab
Fecal Coliform	NL	N/100 ml	1/Quarter	Grab
Sulfate	NL	mg/L	1/Quarter	Grab

NL = No Limit. This is a monitoring requirement only.

a. Samples taken in compliance with the monitoring requirements specified above shall be taken at the surfacewater monitoring stations SW-1, SW-2, and SW-3 in accordance with Attachment C.

b. Quarterly samples shall be taken during the months of January, April, July and October. All test results shall be reported to the Department of Environmental Quality – PRO by the tenth of the following month.

B. Other Requirements or Special Conditions

1. There shall be no discharge of pollutants to surface waters from this operation except in the case of a 25 year-24 hour or greater storm event. The operation of the facilities of the owner permitted herein shall not contravene the Water Quality Standards, as adopted and amended by the Board, or any provisions of the Water Control Law.

2. Any and all product, materials, industrial wastes, and/or other wastes resulting from the purchase, sale, mining, extraction, transport, preparation, and/or storage of raw or intermediate materials, final product, by-product or wastes, shall be handled, disposed of, and/or stored in such a manner so as not to permit a discharge of such product, materials, industrial wastes, and/or other wastes to State waters, except as expressly authorized.

3. Publicly or Privately Owned Sewage Treatment Works shall provide adequate notice to the Department of any substantial change in quantity or quality of pollutants being introduced into the privately or publicly owned sewage treatment works and any anticipated impact the change may have on such treatment works.

4. The owner shall establish and maintain a complete and healthy vegetative cover in accordance with the NMP. Effluent shall be applied only at the sites identified in Attachment A where a complete and healthy vegetative cover has been established.

5. **The owner shall submit for approval an Operations and Maintenance (O&M) Manual for the treatment works/pollutant management system permitted herein.** This manual shall detail practices and procedures, including applicable Best Management Practices, which will be followed to ensure compliance with the requirements of this permit. **The manual shall be submitted for staff approval within 90 days of the effective date of this permit and shall be approved prior to start-up of operations.** The Owner shall operate the treatment works/pollutant management system in accordance with the approved O&M Manual which shall become an enforceable part of this permit. The permittee shall maintain an accurate, approved O&M manual. Future changes to the treatment works and/or components of the O&M manual must be addressed by the submittal of a revised O&M manual within 90 days of the changes. The most current approved version of the O&M or any of its components shall supercede all previously approved editions.
   a. A Sludge Management Plan shall be developed, shall be included as part of the O&M manual, and shall be an enforceable part of this permit. Such plan shall include the volume, percent solids, and nutrient content of the sludge along with the plan for removal and appropriate disposal.
   b. The O&M manual shall include a quality assurance plan which specifically addresses sampling and laboratory analyses. This plan must include sampling protocol, holding times, laboratory methods and quantification limits.

6. The NMP developed for this project was approved on July 9, 2003. The NMP shall be updated by a certified Department of Conservation and Recreation Planner and resubmitted to the DEQ-Piedmont Regional Office for approval as part of the O&M manual no less frequently than once per three years. The NMP shall be submitted to the DEQ no later than 60 days before the plan expiration to allow for adequate review and approval time.
   a. The approved Nutrient Management Plan (NMP) and crop irrigation schedules developed for this project shall be included as part of the O&M Manual and shall be an enforceable part of this permit.

7. **At least 90 days before irrigation is to commence, the permittee shall submit for approval a Soil Moisture Monitoring Plan (SMMP) to the DEQ, Piedmont Regional Office. The permittee shall submit a revised SMPP by January 10 each year or a statement confirming the accuracy and completeness of the current SMMP.** There shall be a minimum of one soil moisture monitoring device per each zone. The approved plan shall become part of the O&M Manual and an enforceable part of the permit. The SMMP shall incorporate the soil moisture monitoring devices recommended by Virginia Tech for the project. The soil moisture monitoring devices used shall be capable of accurately measuring soil moisture so as to allow the facility to control irrigation events in accordance with all permit requirements.

   The SMMP plan shall include the following:

   a. a description of the soil moisture monitoring devices to be used at the facility;
   b. a general description of the location of each monitoring device, including but not limited to soil type and depth;
   c. an explanation, including sample calculation based on soil moisture monitor readings, of how irrigation rates will be developed to prevent exceeding field capacity;
   d. a description of how irrigation will be managed and soil moisture readings interpreted when there are different soil types and moisture levels within the same field;
   e. the manufacturer's recommendations for maintaining the monitoring devices in order to ensure reliable measurements;
   f. a plan for maintaining the monitoring devices that incorporates the manufacturer's recommendations and ensures that, prior to irrigation, all the facility's soil moisture monitors are made operational and are supplying data. Documentation must be submitted by March 15 and September 15 of each year from a qualified person certifying that all required sensors have remained properly operating since the previous certification. Should inclement weather conditions (i.e. snow cover or field conditions) prevent completion of annual maintenance by March 15 and September 15, the maintenance must be completed no later than 30 days before initiating spray irrigation.
   g. the plan shall include a detailed calibration plan (refer also to the approved NMP), including a timeline for completing the plan. The calibration plan should include all procedures necessary to develop a soil moisture release curve for each major soil type (gravimetric soil sampling locations and procedures, analytical methods, minimum number of samples and moisture range for initial calibration, example curves, etc.) The plan should then outline an ongoing program of gravimetric sampling for confirming and further developing the initial calibration curves; and
   h. a schedule for implementing the SMMP.

8. Soil moisture sensor meter readings shall be taken on a daily basis and shall be taken at approximately the same time of day to determine the potential schedule for a subsequent irrigation event. Sensor readings shall precede each irrigation event. An irrigation event is defined as the irrigation that takes place over the time period required to meet a calculated water need. An irrigation event can extend over several days assuming that the water need has not been met by irrigation, rainfall, or a combination of the two.

9. The permittee shall harvest reed canarygrass (*Phalaris arundinacea*), hybrid 'Palaton'

(RCP) or other equivalent approved reed canarygrass hybrid cited in the approved NMP grown on the land application sites as outlined in the approved O&M Manual. Under no circumstances is the crop to be cut and left on site during or after the growing season.

10. The permittee shall develop and follow the approved Cation Imbalance Plan to correct cation imbalances (from sodium in wastewater) should they develop at the spray sites. The plan shall be a part of the O&M Manual and an enforceable part of this permit.

11. Irrigation shall not occur when the soil moisture is at field capacity, to be defined as a reading of 10 centibars or less on the soil moisture meters or site-specific readings approved in advance by DEQ-PRO. Under no circumstances shall an irrigation event result in field capacity being exceeded. Irrigation shall be limited to prevent ponding or runoff of any wastewaters.

12. In an emergency, or by the request of the DEQ-PRO, the permittee shall place into service within 30 days the reserve area located on the same side of Rt. 612 as the wastewater treatment plant.

13. Winter application of treated effluent shall be to cool season grasses only following three consecutive days of minimum daily temperatures in excess of 25 degrees Fahrenheit and maximum in excess of 40 degrees Fahrenheit.

14. Effluent shall not be applied at rates that exceed those specified in the approved SMMP and the approved NMP.

15. The permittee shall maintain the following buffer zones at all spray irrigation sites as follows:

a.	Distance from improved roadways	25	feet
b.	Distance from occupied dwelling	200	feet*
c.	Distance from water supply wells or springs	100	feet
d.	Distance from surface water courses	50	feet
e.	Distances from property lines	100	feet*
f.	Distance from rock outcrops	50	feet

* Unless reduced by written consent of adjoining property owners.

16. The permittee shall employ or contract at least one wastewater works operator who holds a current wastewater license appropriate for the permitted facility. A class III licensed operator is required at this permitted facility. The license shall be issued in accordance with Title 54.1 of the Code of Virginia and the regulations of the Board for Waterworks and Wastewater Works Operators. The permittee shall notify the Department in writing whenever he/she is not complying, or has grounds for anticipating he/she will not comply with this requirement. The notification shall include a statement of reasons and a prompt schedule for achieving compliance.

17. Operational limitations during periods of inclement weather.

    a. Effluent shall not be applied when the ground is saturated, or during periods of rainfall.
    b. Effluent shall not be applied to cultivated or bare ground covered with ice or snow.
    c. Effluent shall not be applied to frozen ground.

18. A minimum of 30 days shall be provided between the last day of application and utilization of all crops.

19. Crops which will be consumed raw by man shall not be grown in land application areas.

20. A **summary report of the previous month's activities shall be submitted to the DEQ-PRO by the 10th of the following month,** covering the previous month's activities. Reports shall include:

    a. Analyses of samples of effluent land applied during the previous month reported on the monitoring reports provided in Attachments D.1-D.4.
    b. Results of soils, groundwater, and surface water monitoring in accordance with Part I.A. of the permit reported on the monitoring reports provided in Attachments D.6-D.9.
    c. Land application site information describing the quantity and quality of the effluent applied to each field during the previous month reported on the monitoring reports provided in Attachment D.5.
    d. A summary of the quantities of sludge stored in or withdrawn from storage facilities and the remaining storage capacity.
    e. A summary of the influent flows during the previous month, the quantities of sewage effluent stored in or withdrawn from storage facilities, and the remaining storage capacity reported on the monitoring report provided in Attachment D.2.
    f. A summary of staff gauge readings at the storage pond demonstrating freeboard maintenance reported on the monitoring report provided in Attachment D10.
    g. A summary of all soil moisture measuring device readings during the previous monthly period and any maintenance, calibration or corrective work performed on any soil moisture measuring devices.
    h. A summary of (1) the date(s) when groundcover was initiated; and (2) the date(s) of effluent application, at each site where land application occurred.

21. **An annual project summary report shall be prepared and submitted by the 10th of February** to the Department of Environmental Quality - PRO detailing the following:
    a. A summary of the monitoring data results including effluent analysis, soil monitoring, groundwater monitoring, and surface water monitoring.
    b. The yearly water balance showing such items as inputs/drawdown from storage facilities.
    c. Land application site information describing the effluent applied to each field during the previous year with the annual and cumulative loading for limiting constituents (such as Nitrogen and Sodium) and the remaining site life for each field.
    d. A summary of the agronomic practices which occurred during the preceding growing season including but not limited to the timing and number of crop cuttings, and an estimate of total yield (bushels/acre or tons/acre) removed from the site, any lime and fertilizer additions made to the site (describe type and quantities), and reseeding.
    e. A general statement of past system performance and the status of the permitted facilities with regard to complying with Virginia Pollution Abatement Permit requirements.

22. The permittee shall ensure that all wastewater storage tanks maintain a minimum freeboard of two foot at all times. Should the two foot freeboard not be maintained, the permittee shall immediately notify the DEQ - PRO, describing the problem and measures taken to correct the problem. Within 5 days of the notification, the permittee shall submit a written statement of explanation and corrective measures.

23. The owner shall limit wastewater application to a rate at which the plant available nitrogen

(PAN) applied by the wastewater, together with any commercial fertilizer, does not exceed the actual plant nitrogen requirements (as pounds of PAN per acre per year) as specified in the approved nutrient management plan. PAN shall be calculated using the formula supplied in the approved NMP. The owner shall document the rate of wastewater application so that the rate at which the Phosphorus as P_2O_5 and Potassium as K_2O applied by the wastewater, together with any commercial fertilizer, is compared to the actual plant requirements (as pounds per acre per year) as specified in the approved nutrient management plan. Should the monitoring required by this permit indicate the need for any additional limitations, this permit may be modified or alternatively revoked and reissued to incorporate appropriate limitations.

24. **A written notice and a plan of action for ensuring continued compliance** with the terms of this permit **shall be submitted** to the Department of Environmental Quality - PRO at 4949-A Cox Road, Glen Allen, Va. 23060, **when the reserve area is used for wastewater application for 3 or more consecutive months. The written notice shall be submitted within 30 days and the plan of action shall be received at the DEQ - PRO no later than 90 days from the third consecutive month** for which the reserve area was used. The plan shall include the necessary steps and a prompt schedule of implementation for controlling any current or reasonably anticipated problem resulting from high influent flows. Failure to timely submit an adequate plan shall be deemed a violation of the permit.

25. The permittee in accordance with the Sewerage Regulations **shall obtain a Certificate to Construct (CTC), and a Certificate to Operate (CTO) from the Department of Environmental Quality, Water Division prior to constructing wastewater treatment facilities and operating the facilities** respectively. Non-compliance with the CTC, or CTO shall be deemed a violation of the permit.

26. A Facilities Closure Plan shall be developed prior to termination of the pollutant management activities covered under this permit. The plan shall incorporate:
    a. The volume, percent solids, nutrient content, and other waste characterization information appropriate to the nature of the waste materials.
    b. A listing of all waste products at the facility along with a description of procedures for removal, land application, or other proper disposal of the wastes.
    c. The plan shall address liquid and sludge removal, odor control measures, structure and pipe removal, steps to prevent unauthorized access, fill materials, final grading and seeding.
    d. The plan shall contain proposed dates for beginning and completion of the work.
    e. The permittee shall sample once for each foot of drawdown, and, when the discharge no longer meets permit limits, the discharge shall cease and the rest of the basin contents shall be pumped and hauled to another, permitted facility for treatment and disposal
    f. Closure plans for all waste treatment, storage, and handling facilities.

    The Facilities Closure Plan shall be submitted to the Department of Environmental Quality - PRO for review and approval prior to implementation of the plan.

27. Waste sludge or wastewaters shall not be applied to the land if it is likely to adversely affect a threatened or endangered species listed under Virginia Water Quality Standards Regulation (9 VAC 25-260-10 et seq.) or Section 4 of the Endangered Species Act or if the land application is likely to adversely affect its designated critical habitat.

28. In accordance with the requirements of VPA application form 2D, the permittee shall complete and submit item D-IV of Form 2D for the wastewater no later than two years following the permit's effective date, or the commencement of discharge to the sprayfield if later than the permit's effective date. Following an evaluation of the required information, this permit may be modified or alternatively revoked and reissued in order to incorporate additional or different permit conditions. Using these data, the permittee shall prepare a revised site life analysis which shall be submitted within 90 days of the submittal of item D-IV of Form 2D.

ATTACHMENT A

LAND APPLICATION SITES

A. Coles Point Wastewater Treatment Plant

MONITORING STATION	DESCRIPTION/LOCATION
Field 1A	Located in the western-most portion of the main sprayfield.
Field 1B	Located east of Field 1A in the main sprayfield.
Field 2A	Located east of Field 1B in the main sprayfield.
Field 2B	Located east of Field 2A in the main sprayfield.
Field 3A	Located east of Field 2B in the main sprayfield.
Field 3B	Located east of Field 3A in the main sprayfield, in the easten-most portion of the spraytield.
12.6 acre reserve area (to be used if necessary)	Located west of Rt. 612 from the main sprayfield, at the wastewater treatment plant site.

ATTACHMENT B

MONITORING WELL LOCATIONS

MONITORING STATION	DESCRIPTION/LOCATION
MW-1	Monitoring Well #1 – Located Northeast of the Treatment Plant, in the Reserve area.
MW-2	Monitoring Well #2 – Located in the Southwest corner of application field 1A.
MW-3	Monitoring Well #3 – Located in a central location of application field 1B.
MW-4	Monitoring Well #4 – Located centrally and next to the drainage ditch through application field 2B.
MW-5	Monitoring Well #5 – Located in the Southwest corner of application field 3B next to a drainage swale.
MW-6	Monitoring Well #6 – Located in the Eastern most part of the application field 3B along the buffer.

ATTACHMENT C

SURFACEWATER MONITORING LOCATIONS

A. Coles Point Wastewater Treatment Plant

MONITORING STATION	DESCRIPTION/LOCATION
SW-1	Surfacewater Monitoring Station #1 – Located Northwest of Field 1A.
SW-2	Surfacewater Monitoring Station #2 - in Gardner's Creek, south of the drainage swale separating Field 2B and 3A.
SW-3	Surfacewater Monitoring Station #3 - in Gardner's Creek, east of field 3B.

ATTACHMENT D.1.
VPA MONITORING REPORT
VPA01423

Coles Point Wastewater TP

Month:_____
Report Date:_____

I hereby certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

The following attachments are included with this submittal:

( ) Attachment D.1- D.3 - Wastewater Monitoring (A daily operational log and any contractual lab certification sheets are required as an addendum to this report).	(1/Month)
( ) Attachment D.4 - Wastewater Monitoring	(1/5 Years)
( ) Attachments D.5 Land Application Monitoring	(1/Month)
( ) Attachments D.6 Soil Monitoring	(1/Year and 1/5 Year)
( ) Attachment D.7 Groundwater Monitoring	(1/Quarter)
( ) Attachment D.8 Groundwater Monitoring	(1/Year)
( ) Attachment D.9 Surfacewater Monitoring	(1/Quarter)
( ) Attachment D.10. Daily Freeboard Monitoring Log	(1/Month)

( ) Other_____
_____

Coles Point Wastewater Treatment Plant
Westmoreland County
P.O. Box 1000
Montross, Va. 22520

_____ _____
Printed Name Signature

_____ _____
Title Date

ATTACHMENT D.2
VPA MONITORING REPORT
Location: Flow Meter
Wastewater Monitoring
This monitoring is required by VPA01423, Part I.A. Wastewater Influent to Storage Pond

Coles Point Wastewater TP

VPA01423

Year:_____

Parameter	Influent Flow (Avg.)	Influent Flow (Total)	Volume from Storage to each site	Volume in Storage	Remaining Storage Capacity	pH	TSS	BOD_5
Limits	NL	NL	NL	NL	NL	NL	60 mg/l	60 mg/l
Units	MGD	MG	MG	MG	MG	S.U.	mg/l	mg/l
Frequency	Continuous	Continuous	*********	1/Day	1/Day	1/Month	1/Month	1/Month
Sample Type	Measure	Recorded	From D.3	Calculated	Calculated	Grab	8 HC	8HC
Required Reporting	1/Month	1/Month	1/Month	1/Month	1/Month	1/Month	1/Month	1/Month
Month	**********	**********	Identify site(s):	**********	**********	**********	**********	**********
January								
February								
March								
April								
May								
June								
July								
August								
September								
October								
November								
December								

ATTACHMENT D.3
VPA MONITORING REPORT

Coles Point Wastewater TP Location: Storage Pond

Monitoring Required by VPA01423 Part I.A. Wastewater from Storage Pond to Spray Fields
*Requirement of the NMP which expires July 9, 2006
Effluent Monitoring: Monthly Parameters

VPA01423
Year:

Parameter	Total Kjeldahl Nitrogen (TKN)	Ammonia Nitrogen (NH_3-N)	Nitrate Nitrogen (NO_3-N)	Alkalinity	Storage Tank Freeboard	Total Potassium	pH	Total Sodium	Total Chloride	Total Boron	Total Phosphorus	Total Residual Chlorine (TRC)
Limits	NL	NL	NL	NL	2ft. min.	NL	NL	NL	NL	NL	NL	1.5 (min.)
Units	mg/l	mg/l	mg/l	mg/l	ft.	mg/l	S.U.	mg/l	mg/l	mg/l	mg/l	mg/l
Frequency	1/Month	1/Month	1/Month	1/Month	1/Day	1/Month	1/Day	1/Month	1/Month	2/Year	1/Month	1/Day
Sample Type	Grab	Grab	Grab	Grab	Measure	Grab	Grab	Grab	Grab	Grab	Grab	Grab
Required Reporting	Monthly	Monthly	Monthly	Monthly	Monthly	Monthy	Monthly	Monthly	Monthly	2/Year	Monthly	Monthly
Month	*******	**********	*********	**********	********	********	********	********	*******	*******	********	********
January										xxxxx		
February										xxxxx		
March										xxxxx		
April												
May										xxxxx		
June										xxxxx		
July										xxxxx		
August										xxxxx		
September										xxxxx		
October												
November										xxxxx		
December										xxxxx		

Parameter	Calcium*	Mag-nesium*	% Moisture*
Units	mg/l	mg/l	%
Spring Month:			
Late Summer Month:			

ATTACHMENT D.4
VPA MONITORING REPORT
Location: After Storage and Prior to Irrigation
Effluent Monitoring: 1/5 Year Parameters

Coles Point

VPA01423
Year:_____

This monitoring is required in VPA01423 Part I.A., Wastewater from Storage Pond to Spray Fields

Parameter	Total Recoverable Cadmium	Total Recoverable Copper	Total Recoverable Lead	Total Recoverable Nickel	Total Recoverable Zinc
Limits	NL	NL	NL	NL	NL
Units	mg/l	mg/l	mg/l	mg/l	mg/l
Sample Type	Grab	Grab	Grab	Grab	Grab
Required Reporting	1/5 Years	1/5 Years	1/5 Years	1/5 Years	1/5 Years
Month	**********	**********	*********	**********	**********
January					
February					
March					
April					
May					
June					
July					
August					
September					
October					
November					
December					

ATTACHMENT D.5
VPA MONITORING REPORT
Location: Land Application Site
Land Application
This monitoring is required by VPA01423 Part I.A. Land Application Monitoring
*Requirement of the NMP which expires July 9, 2006

Coles Point Wastewater TP

VPA01423

Month/Year:

	Total Gallons Applied	in/hr	in/period	in/wk	Cumulative in/year	Nov through Feb. Cumulative Inches
Limit:	**********	0.25	1.0	2.0	20	5.9
Units:	gal.	in/hr	in/day	in/wk	in/yr	in/winter
Zone:						

	Effluent Plant Available Nitrogen (PAN) Applied	Other N Applied (Fertilizer, etc.)	Total PAN applied year to date	Effluent Phos-phorus Applied	Other Phos-phorus Applied (Fertilizer, etc.)	Effluent Phosphorus Applied Year to Date	Effluent Potassium Applied	Other Potassium Applied (Fertilizer, etc.)	Effluent Potassium Applied Year to Date
Limit	*********	**********	60 lb/a first year; 160 lb/a year 2-5; 30 lb/a Nov-Feb*	*******	********	*********	*********	*******	*******
Units	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre	lb/acre
Zone:									

ATTACHMENT D.6
VPA MONITORING REPORT
Location: Land Application Site
Soil Monitoring: Yearly and 1/5 Year Parameters
This monitoring is required b y VPA01423 Part I.A. Soil Monitoring

Coles Point Wastewater TP

VPA01423

Year:_____

Parameter	Soil Organic Matter	Soil pH	Cation Exchange Capacity	Total Nitrogen	Organic Nitrogen	Ammonia Nitrogen	Available Phos-phorus	Exchange-able Potassium	Hydraulic Conductivity	Exchange-able Sodium	Exchange-able Calcium
Limits	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL
Units	%	Standard Units	meq/100g	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	in/hr	mg/100g	mg/100g
Sample Type	Composite	Composite	Composite	Composite	Composite	Composite	Composite	Composite	in situ	Composite	Composite
Required Reporting	Annually	Annually	Annually	Annually	Annually	Annually	Annually	Annually	Annually	Annually	Annually
Date	********	******	********	*********	*******	*********	********	********	*********	********	*********

Parameter	Exchange-able Magnesium	Textural Classification or USDA Particle Size Analysis	Total Re-coverable Chromium	Total Recov-erable Mang-anese	Total Recov-erable Copper	Total Recov-erable Nickel	Total Recov-erable Zinc	Total Recov-erable Cadmium	Total Recov-erable Lead
Limits	NL	NL	NL	NL	NL	NL	NL	NL	NL
Units	mg/100g	%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Sample Type	Composite	Composite	Composite	Composite	Composite	Composite	Composite	Composite	Composite
Required Reporting	Annually	1/5 years	1/5 Years	1/5 Years	1/5 Year	1/5 Year	1/5 Year	1/5 Year	1/5 Year
Date	********	*********	*********	********	********	*********	********	*********	*********

ATTACHMENT D.7
VPA MONITORING REPORT
Location: Groundwater Monitor Wells
Groundwater Monitoring: Quarterly Parameters

Coles Point Wastewater TP

Well Number GW-___

VPA01423
Year:_____

Parameter	Static Water Level	Chloride	Chemical Oxygen Demand (COD)	Fecal Coliform	Conductivity	Total Kjeldahl Nitrogen (TKN)	Ammonia Nitrogen (NH_3-N)	Nitrate Nitrogen (NO_3-N)
Limits	NL	NL	NL	NL	NL	NL	NL	1.5 (min.)
Units	ft/MSL	mg/l	mg/l	N/100 ml	umhos	mg/l	mg/l	mg/l
Sample Type	Measure	Grab	Grab	Grab	Grab	Grab	Grab	Grab
Required Reporting	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly
Date	*******	*******	*******	*******	********	*******	********	********
January-March								
April-June								
July-September								
October-December								

Parameter	pH	Sodium
Limits	NL	NL
Units	S. U.	mg/l
Sample Type	Grab	Grab
Required Reporting	Quarterly	Quarterly
Date	*******	*******
January-March		
April-June		
July-September		
October-December		

ATTACHMENT D.8
VPA MONITORING REPORT
Location: Groundwater Monitor Wells
Groundwater Monitoring: Yearly Parameters

Coles Point Wastewater TP

Well Number GW-___

VPA01423
Year:_____

Parameter	Fluoride	Hardness as $CaCO_3$	Alkalinity	Total Phosphorus	Total Re-coverable Boron	Total Recovera ble Copper	Total Recoverable Manganese	Total Recoverable Chromium	Total Recoverable Cadmium
Limits	NL	NL	NL	NL	NL	NL	NL	NL	1.5 (min.)
Units	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Sample Type	Grab	Grab	Grab	Grab	Grab	Grab	Grag	Grab	Grab
Required Reporting	Annually—October 10	Annually—October 10	Annually—October 10	Annually—October 10	Annually—October 10	Annually—October 10	Annually—October 10	Annually—October 10	Annually—October 10
Date	*******	*******	*******	*******	********	*******	*********	********	********
January-March									
April-June									
July-September									
October-December									

Parameter	Total Recoverable Nickel	Total Recoverable Lead	Total Re-coverable Zinc
Limits	NL	NL	NL
Units	mg/l	mg/l	mg/l
Sample Type	Grab	Grab	Grab
Required Reporting	Annually—October 10	Annually—October 10	Annu-ally—October 10
Date	*******	*******	
January-March			
April-June			
July-September			
October-December			

ATTACHMENT D.9
VPA MONITORING REPORT
Location: Surface Water Monitoring Sites
Surface Water Monitoring: Twice Yearly Parameters
These are required by VPA01423 Part I.A. Surfacewater Monitoring

Coles Point Wastewater TP

VPA01423

Year:_____

Mon. Station SW-___

Parameter	pH	Chloride	Fecal Coliform	Total Kjeldahl Nitrogen	Nitrate Nitrogen (NO_3-N)	Ammonia Nitrogen (NH_3-N)	Con-ductivity	Sulfate	BOD_5	Total Phos-phorus
Limits	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL
Units	S.U.	mg/l	N/100 ml	mg/l	mg/l	mg/l	mHos	mg/l	mg/l	mg/l
Sample Type	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab
Required Reporting	1/Quarter	1/Quarter	1/Quarter	1/Quarter	1/Quarter	1/Quarter	1/Quarter	1/Quarter	1/Quarter	1/Quarter
Date	******	*******	*******	********	********	********	******	*******	*********	********
January-March										
April-June										
July-Sept										
Oct-Dec.										

Daily Freeboard Measurement Operational Log

VPA01423

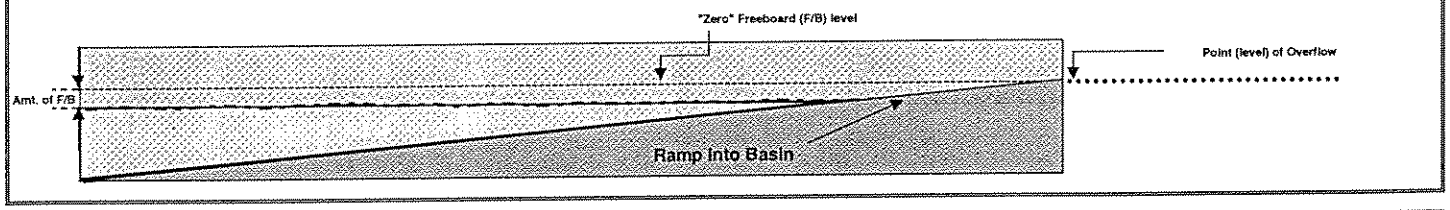
Facility Name: _____
Permit # _____
Month: _____
Year: _____

pH Method: Standard Methods 18th Edition 4500-H B and Manufacturer's Instructions
Freeboard Method: Ruler Measurement from calibrated 'Zero' freeboard point

		pH Meter Calibration *Record actual buffer values*			pH	pH	Effluent		Freeboard (Inches)			(Amount)	
Date	Time	Buffer 1	Buffer 2	Temp.	Sample Time	Analysis Time	pH S.U.	Initials	Basin 1	Basin 2	Basin 3	Solids Removal	Comments/Maintenance
1													
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													
13													
14													
15													
16													
17													
18													
19													
20													
21													
22													
23													
24													
25													
26													
27													
28													
29													
30													
31													
Minimum pH													
Maximum pH													
Minimum F/B													

Note: "Freeboard" measurement is the vertical distance (inches) from the water level to the level at which wastewater will leave the settling basin.
Note: If the "Freeboard" is less than 24 inches, DEQ must immediately be notified, and a written statement of explanation and corrective measures is due within 5 days.

Cross-sectional view of Settling Basin - Example 1 (Basin side wall is higher than level of overflow)



Cross-sectional view of Settling Basin - Example 2 (Basin side wall <u>is</u> the point/level of overflow)